

## PROCEEDINGS OF International Conference on Veracity Research in Scientific Computation and Engineering Trends

**ICVRSCET** 2019 Organized by V.R.S. COLLEGE OF ENGINEERING AND TECHNOLOGY

Accredited by NAAC & An ISO9001:2008 Recertified Institution

Arasur - 607 107, Villupuram District, Tamil Nadu, India.

## PROCEEDINGS OF INTERNATIONAL CONFERENCE ON VERACITY RESEARCH IN SCIENTIFIC COMPUTATION AND ENGINEERING TRENDS (ICVRSCET 2019)

28<sup>th</sup> March 2019





Organized by



V.R.S. COLLEGE OF ENGINEERING AND TECHNOLOGY

Arasur - 607 107, Villupuram District,

Tamil Nadu – India.

# MESSAGE FROM V. R. S. COLLEGE OF ENGINEERING AND TECHNOLOGY

Dear Colleagues and Guests,

A sincere initiative to promote academic excellence and collaborative innovation is being realized through the hosting of the *1<sup>st</sup> International Conference on Veracity Research in Scientific Computation and Engineering Trends (ICVRSCET-2019).* Organized by V.R.S. College of Engineering and Technology, Arasur, Villupuram District, Tamil Nadu, India, this conference aims to serve as a prominent platform for sharing knowledge and fostering research advancements in scientific computation and engineering. The core objective of ICVRSCET-2019 is to bring together leading academicians, industry professionals, research scholars, and students from across the globe to exchange ideas, present innovations, and discuss challenges in the contemporary fields of engineering and technology. The conference is structured around parallel sessions and will feature keynote speeches and invited talks by distinguished scientists and scholars, alongside thought-provoking paper presentations by young researchers.

We believe that this gathering will play a significant role in propelling research, enhancing cross-disciplinary collaboration, and influencing the technological landscape through impactful discussions and networking. We are confident that the participants will enjoy the vibrant academic environment, hospitable atmosphere, and the warm hospitality at V.R.S. College of Engineering and Technology.

We look forward to your valuable participation and wish the conference a grand success.

#### V.R.S. College of Engineering and Technology,

Arasur, Villupuram District, Tamil Nadu, India.

#### **ABOUT THE CONFERENCE**

The International Conference on Veracity Research in Scientific Computing and Engineering Trends (ICVRSCET-2019) is a pioneering academic initiative aimed at fostering high-quality research in the domain of scientific computation and engineering. This global platform is designed to bring together leading researchers, scientists, academicians, and industry experts to share their insights, discoveries, and technological innovations across a wide range of disciplines. The conference spans interdisciplinary fields such as Computer Science, Information Technology, Civil Engineering, Electronics, and Mechanical Engineering. It highlights emerging trends and groundbreaking innovations that address real-world challenges and drive societal progress. By providing a collaborative environment, ICVRSCET-2019 encourages the exchange of novel ideas and promotes research that bridges gaps between theory and application. This event serves as an ideal venue for developing international research collaborations and inspiring future advancements in science and technology.

#### **SCOPE OF CONFERENCE**

The primary objective of the "International Conference on Veracity Research in Scientific Computation and Engineering Trends" is to provide a comprehensive platform for researchers, academicians, industry professionals, and students to explore the latest challenges, methodologies, and breakthroughs in scientific and engineering domains. The conference aims to promote the dissemination of innovative research, facilitate knowledge exchange on current and emerging technologies, and foster collaborative efforts across multiple disciplines. Participants will gain exposure to cutting-edge developments and best practices, enhancing their understanding of how these advancements are shaping modern engineering and technological applications in today's competitive world.

#### **ABOUT VRSCET**

V.R.S. College of Engineering and Technology, established in 1994 in Arasur, Villupuram District, Tamil Nadu, under the aegis of S.P.S. Educational Trust, has grown into a reputed institution committed to quality technical education and research. Affiliated with Anna University, Chennai, and approved by AICTE, New Delhi, the college is accredited by NAAC, Bengaluru, and certified by ISO 9001:2008. The institution is administered by a dedicated Board of Governors, including its Chairperson Mrs. Vijaya Muthuvannan, Secretary & Correspondent Mr. S. R. Ramanathan, and Director Mr. N. Muthuvannan. The college administration is efficiently overseen by Er. M. Saravanan. VRSCET is dedicated to the rapid dissemination and practical application of scientific knowledge. By encouraging innovative thinking and leveraging technological advancements, the institution contributes significantly to the socio-economic development of the nation. It addresses the growing need for skilled resources capable of meeting complex challenges in a rapidly evolving world. With a vision to promote intellectual and professional excellence, VRSCET has established a strong foundation in a rural setting, offering diverse career-oriented programs. The institution is recognized for its state-of-the-art infrastructure, academic rigor, and consistent achievements. Through strategic planning and continuous enrichment of its curriculum and activities, the college empowers aspiring engineers, technologists, and managers to excel and lead in their respective fields.



#### **ORGANIZING COMMITTEE**

#### **CHAIRMAN**

#### Dr. N. ANBAZHAGHAN, M.E., Ph.D., (Principal)

V.R.S College of Engineering and Technology, Arasur - 607 107, Villupuram District.

#### **CONVENOR**

#### Dr. J. JOSEPH IGNATIOUS, M.E., Ph.D., (Professor)

Department of Electronics and Communication Engineering,

V.R.S College of Engineering and Technology, Arasur, Villupuram District

#### **CO-CONVENORS**

Dr. G. PERUMAL, M.E., Ph.D., (HoD)

Department of Mechanical Engineering,

V.R.S College of Engineering and Technology, Arasur, Villupuram District.

#### Prof. P. KARUNANITHI, M.Tech., (HoD)

Department of Computer Science and Engineering,

V.R.S College of Engineering and Technology, Arasur, Villupuram District.

#### **MEMBERS**

#### Mr. G. SADIQ BASHA, M.Tech., (HoD)

Department of Electronics and Communication Engineering,

V.R.S College of Engineering and Technology, Arasur, Villupuram District.

#### Mr. S. ARUNPANDIYAN, M.E., (HoD)

Department of Electrical and Electronics and Engineering,

V.R.S College of Engineering and Technology, Arasur, Villupuram District.

#### Mr. P. VIJAYAKUMAR, M.E., (HoD)

Department of Civil Engineering,

V.R.S College of Engineering and Technology, Arasur, Villupuram District.

#### <u>CO-ORDINATOR</u> Mr. K. RAMESH, M.E., (Ph.D.,)

Department of Computer Science and Engineering,

V.R.S College of Engineering and Technology, Arasur, Villupuram District.

## **EDITORIAL BOARD – NATIONAL**

**Dr. Preeti Mehta** National Institute of Technology, Delhi, India.

**Dr. Nidhi Gupta** NIT Kurukshetra, India.

**Dr. Vinod Kumar** University of Allahabad, India.

Praveen Chouhan Indian Institute of Technology Guwahati, Assam, India.

Dr. Amar Singh Lovely Professional University, Punjab, India.

Amit Bhongade Indian Institute of Technology Delhi, India.

**Ravi Kiran Varma P** SRKR Engineering College, Andhra Pradesh, India. **Dr. Vaibhav E. Narawade** Ramrao Adik Institute of Technology, Maharashtra, India.

**Dr. Vikash** Jaypee Institute of Information Technology, Noida, India.

Dr. Sakshi Gupta Amity University Noida, UP, India.

Raghavendra S Manipal Institute of Technology, Karnataka, India.

M. Nazma B. J. Naskar Kalinga Institute of Industrial Technology, Odisha, India.

Vinay Pant Moradabad Institute of Technology, Uttar Pradesh, India.

Majid Zaman University of Kashmir, Srinagar, India. **Dr. Syed Mujtiba Hussain** Islamic University of Science and Technology, India.

**Dr. Ashima Anand** Thapar Institute of Engineering and Technology, Patiala, India.

**Dr. Suvarna Pawar** MIT Art, Design & Technology University, Pune, India.

**Parvati Bhurani** Mahila Engineering College Ajmer, Rajasthan, India.

**Dr. R. Kishore Kanna** VelTech Rangarajan Dr. Sagunthala R&D Institute of Science and Technology, India.

Lakshmana Kumar R Sri Ranganathar Institute of Engineering and Technology, India.

# **EDITORIAL BOARD – INTERNATIONAL**

Dr. Noorayisahbe Bt Mohd Yaacob University Kebangsaan Malaysia, Selangor, Malaysia.

Mar. 28 N ICVRSCET

> Kingsley Attai Ritman University, Nigeria.

Israa M. Hayder Southern Technical University, Iraq. **Dr. Nor Surayahani Suriani** Universiti Tun Hussein Onn Malaysia, Malaysia.

Touseef Sadiq University of Agder, Norway.

Sanjeeb Prasad Panday Tribhuvan University, Nepal.

**Atif Ikram** The University of Lahore, Pakistan. **Dr. L.S.K. Udugama** The Open University of Sri Lanka, Sri Lanka.

**Bamidele Oluwade** University of Ibadan, Nigeria.

Faiza Bashir University of the Punjab, Pakistan.

International Conference on Veracity Research in Scientific Computation and Engineering Trends (ICVRSCET-2019)

TABLE OF CONTENTS		
PAPER ID	TITLE	PAGE NO
IC19-007	SMART DOCTOR APPOINTMENT AND NOTIFICATION SYSTEM <sup>1</sup> SARANYA J, <sup>2</sup> SATHIYA P, <sup>3</sup> UDHAYA PRABHA V SNS COLLEGE OF TECHNOLOGY, INDIA	1
IC19-043	PERFORMANCE EVALUATION MODELING OF NORMAL AND HIGH STRENGTH BEAMS WITH MICRO REINFORCEMENT USING ARTIFICIAL NEURAL NETWORKS <sup>1</sup> S SARASWATHY, <sup>2</sup> L SOUNDARI IFET COLLEGE OF ENGINEERING, INDIA	2
IC19-129	AN ENHANCED NEURAL NETWORK ALGORITHM FOR SPAM DETECTION IN TWITTER DATA <sup>1</sup> DHIVYA R, <sup>2</sup> GUNASELVI J, <sup>3</sup> S USHARANI IFET COLLEGE OF ENGINEERING, INDIA	3
IC19-085	NUTRIENT ALLOCATION BASED ON QUALITY OF SERVICE USING DIGITALIZATION STRATEGIES <sup>1</sup> PANJI BINTORO AISYAH UNIVERSITY, INDONESIA	4
IC19-172	GESTURE MONITORING AND ANALYSIS FOR THE HEARING AND SPEECH IMPAIRED USING SENSOR-BASED TECHNOLOGY <sup>1</sup> MOHAMMED RASHAD BAKER, <sup>2</sup> NILA FEBY PUSPITASARI UNIVERSITY OF KIRKUK, IRAO	5
IC19-056	VIDEO ANALYSIS FOR DETECTING MALPRACTICE IN CLASSROOM EXAMINATIONS <sup>1</sup> K GOWSIKA, <sup>2</sup> S ISHWARYA IFET COLLEGE OF ENGINEERING, INDIA	6
IC19-034	A SURVEY ON SENTIMENT ANALYSIS USING DEEP LEARNING APPROACHES <sup>1</sup> KALAIVANI A, <sup>2</sup> THENMOZHI D SSN COLLEGE OF ENGINEERING, INDIA	7
IC19-160	IOT-BASED SYSTEM FOR PREDICTING MECHANICAL FAILURES IN VEHICLES AND ENSURING TIMELY REPLACEMENTS <sup>1</sup> S S AKILAN, <sup>2</sup> D KAYATHRI DEVI KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY, INDIA	8

G

IC19-119	CUSTOMER COMPLAINT MANAGEMENT SYSTEM: AN	
	INTEGRATED APPROACH	
	IS DOOLA 2K S DOOLA 3S DDEM KUMAD	0
	<sup>4</sup> B MADHANKUMAR <sup>5</sup> B VIVEK SNS COLLEGE OF TECHNOLOGY	,
	INDIA	
IC19-077	ENHANCING MANET PERFORMANCE BY REDUCING	
	<b>ROUTING OVERHEAD USING ARPRP PRINCIPLE</b>	
		10
	<sup>1</sup> B VINODHINI, <sup>2</sup> DR M MARIKKANNAN, <sup>3</sup> DR S KARTHIK SNS COLLEGE OF TECHNOLOGY, INDIA	
IC10 101	HUMAN PRESENCE DETECTION IN REMOTE AREAS USINC	
1019-101	REMOTE SENSING TECHNOLOGY	
		11
	<sup>1</sup> S SUMATHI, <sup>2</sup> DR S KARTHIK, <sup>3</sup> J ALFRED DANIEL	
	SNS COLLEGE OF TECHNOLOGY, INDIA	
IC19-064	A SMART ANDROID APPLICATION FOR STUDENT ASSISTANT	
	SYSTEM IN EDUCATIONAL INSTITUTIONS	
		12
(	<sup>1</sup> R REETHU, <sup>2</sup> D PREETHA, <sup>3</sup> P PARAMESHWARAN,	
1010 146	SNS COLLEGE OF TECHNOLOGY, INDIA	
IC 19-146	HIGH-SPEED MULTIPLIER DESIGN USING KOGGE STONE	
	ADDER	13
	<sup>1</sup> R ARUN SEKAR, <sup>2</sup> M KATHIRVELU, <sup>3</sup> M GOVINDA,	10
(	<sup>4</sup> V KRISHNA CHAITANYA, <sup>5</sup> T BHAGYASRI	
	GMR INSTITUTE OF TECHNOLOGY, INDIA	
IC19-027		
	WEB APPLICATION FOR OPINION MINING AND SENTIMENT	
	ANALYSIS OF AUTOMOBILE REVIEWS	14
	<sup>1</sup> NITHIN <sup>2</sup> S KEERTHANA SRI <sup>3</sup> P POONKODI	
	SNS COLLEGE OF TECHNOLOGY, INDIA	
IC19-093		
	STRESS DETECTION THROUGH SOCIAL INTERACTION ON	
	SOCIAL MEDIA	15
	A SHOBLY A PREYADHARSHINI, "K SWATHI, "D THEVEYA SNS COLLEGE OF TECHNOLOGY, INDIA	
IC19-150	SNS COLLEGE OF TECHNOLOGI, INDIA	
1017-150	SMART APPROACH FOR REPORTING AND RECTIFYING	
	<b>COMMUNITY ISSUES THROUGH AN ONLINE</b>	16
	APPLICATION	
	<sup>1</sup> V ANGELICA GARCIA VEGA	
	UNIVERSIDAD VERACRUZANA, MEXICO	

International Conference on Veracity Research in Scientific Computation and Engineering Trends (ICVRSCET-2019) G

IC19-115	STUDY ON WASTE REDUCTION COATING FOR RCC SILOS	
	USING POLYURETHANE LINING	17
	<sup>1</sup> KUMAR PRASUN	
	PADMAKANYA MULTIPLE CAMPUS, NEPAL	
IC19-038	EXPERIMENTAL INVESTIGATION ON LIGHTWEIGHT	
1017 000	FOAMED CONCRETE	18
	<sup>1</sup> BABATOUNDÉ O SIMON BIAOU <sup>2</sup> TEMIDAYO OLUWATOSIN	10
	OBAFEMI AWOLOWO LINIVERSITY NIGERIA	
	ODAI LIMI A WOLO WO ONIVERSITI, MOLKIA	
IC19-081	<b>EXPERIMENTAL STUDY ON PARTIAL REPLACEMENT OF FINE</b>	
	AGGREGATE WITH FOUNDRY SAND M-SAND AND COARSE	
	AGGREGATE WITH STEEL SLAG IN CONCRETE	19
	$\bigcirc \bigcirc \bigcirc \bigcirc \bigcirc$	
	<sup>1</sup> SONAL YADAV	
	NATIONAL INSTITUTE OF TECHNOLOGY RAIPUR, INDIA	
IC19-170	EFFICIENT AND PRIVACY-PRESERVING ONLINE	
1019 170	FINGERPRINT AUTHENTICATION SCHEME FOR	
	OUTSOURCED DATA	20
	of isocial binning	
	<sup>1</sup> SHAMILLS, <sup>2</sup> SANGEETHA N. <sup>3</sup> SHALINLR, <sup>4</sup> R SENTHILKUMAR	
(	SNS COLLEGE OF TECHNOLOGY, INDIA	
IC19-111	EXPERIMENTAL STUDY ON THE BEHAVIOR OF CONCRETE	
	REINFORCED WITH BRISTLE COIR FIBERS	
(		21
	<sup>1</sup> M SWATHI1 <sup>2</sup> S KOTTEESWARAN	-1
	SRM INSTITUTE OF SCIENCE AND TECHNOLOGY INDIA	
IC19 054	PERFORMANCE EVALUATION OF STEEL CONCRETE	
1017-034	COMPOSITE AND PRESTRESSED CONCRETE	
	RPIDCES WITH IPC LOADINC	22
	DRIDGES WITH IKC LOADING	
	15 SANDHIVA 25 KOTTEESWADAN	
	SPM INSTITUTE OF SCIENCE AND TECHNOLOGY INDIA	
1010 122	CENTER & DODTAL FOR COMPREHENSIVE LENDING	
IC19-132	CENTRAL PORTAL FOR COMPREHENSIVE LENDING	
	PAYMENT MANAGEMENT	22
	D VIIVADAL 2T MANICHA 3D FADTILIZEVAN 4C MADILI MITLA	23
	D I UVARAJ, I MANISHA, P KARTHIKETAN, C MADHUMITHA	
1010.000	SNS COLLEGE OF TECHNOLOGY, INDIA	
IC19-020	IOT-BASED SMART AGRICULTURE CONTROL AND DIRECT	
	MARKETING SYSTEM	
		24
	<sup>1</sup> VISHAL BADGUJAR	
	UNIVERSITY OF MUMBAI, INDIA	
IC19-142	ACID-RESISTANT BRICKS AND TILES USING INDUSTRIAL	
	WASTE MATERIALS	
		25
	<sup>1</sup> DR SHARMILA SHARAD MORE	
	MIT ARTS, COMMERCE & SCIENCE COLLEGE, INDIA	

International Conference on Veracity Research in Scientific Computation and Engineering Trends (ICVRSCET-2019)

IC19-168	DESIGN AND ANALYSIS OF RESIDENTIAL BUILDING FOR DETONATION SKIRMISH PROTECTION <sup>1</sup> KAMAL HOSSAIN, <sup>2</sup> SAMEER FAROOQ NATIONAL INSTITUTE OF TECHNOLOGY ROURKELA, INDIA	26
IC19-049	<b>EVALUATION OF GROUNDWATER QUALITY AND ITS SUITABILITY FOR DOMESTIC AND IRRIGATION USE</b> <sup>1</sup> M ARUMAISELVI, <sup>2</sup> R R THARIN IFET COLLEGE OF ENGINEERING, INDIA	27
IC19-003	EXPERIMENTAL STUDY ON PARTIAL CEMENT REPLACEMENT WITH BAGASSE ASH AND FINE AGGREGATE REPLACEMENT WITH PRESS MUD IN CONCRETE <sup>1</sup> LEONARDO DE LELLIS ROSSI, <sup>2</sup> GABRIEL JOSÉ PELLISSER DALALANA UNIVERSITY OF SÃO PAULO (USP), BRAZIL	28
IC19-137	APPROACH FOR SMART SPY CAMERA DETECTION USING PROXIMITY SENSOR IN CCTV SYSTEMS <sup>1</sup> IBRALEBBE MOHAMED KALITH, <sup>2</sup> ESMOT ARA TULI SOUTH EASTERN UNIVERSITY, SRI LANKA	29
IC19-091	EXPERIMENTAL INVESTIGATION AND TESTING OF FERROCEMENT SLABS AND DOMES <sup>1</sup> DIVYA, <sup>2</sup> S KOTTEESWARAN SRM INSTITUTE OF SCIENCE AND TECHNOLOGY, INDIA	30
IC19-123	FINGERPRINT-BASED LICENSE AND HELMET DETECTION ANTI- THEFT SYSTEM <sup>1</sup> RONALD CHIWARIRO, <sup>2</sup> PROSPER TAFADZWA DENHERE MANICALAND STATE UNIVERSITY OF APPLIED SCIENCES, ZIMBABWE	31
IC19-030	EFFECTIVE PREDICTION OF PARKINSON'S DISEASE USING DATA MINING ANALYTICAL TOOLS <sup>1</sup> A VISHALI, <sup>2</sup> G NITHIY, <sup>3</sup> P RENUKADEVI PAAVAI ENGINEERING COLLEGE_INDIA	32
IC19-176	STYLE ENHANCEMENT USING VIRTUAL MIRROR TECHNOLOGY <sup>1</sup> GARY LOH CHEE WYAI, <sup>2</sup> ASMA KAUSAR MUKHTAR ALI UNIVERSITY OF TECHNOLOGY SARAWAK, MALAYSIA	33

International Conference on Veracity Research in Scientific Computation and Engineering Trends (ICVRSCET-2019)

IC19-088	X-RAY IMAGE REPORTING SYSTEM USING ASP.NET AND SQL SERVER <sup>1</sup> NOWSHAD HASAN, <sup>2</sup> MUHAMMAD SAJJADUR RAHIM CHITTAGONG UNIVERSITY OF ENGINEERING AND TECHNOLOGY, BANGLADESH	34
IC19-014	HOME APPLIANCE AUTOMATION WITH EXTENDED WARRANTY SYSTEM USING IOT <sup>1</sup> TAOFIK TOLA AJAGBE, <sup>2</sup> ESTHER F FOMSI LAGOS STATE UNIVERSITY, NIGERIA	35
IC19-098	DESIGN AND IMPLEMENTATION OF OPTIMIZED AREA AND PDP MULTIPLIER FOR HIGH-SPEED DIGITAL CIRCUIT APPLICATIONS <sup>1</sup> M KATHIRVELU, <sup>2</sup> P SANDHYA RANI, <sup>3</sup> I VAMSI KRISHNA, <sup>4</sup> K BHARATH GMR INSTITUTE OF TECHNOLOGY, INDIA	36
IC19-066	INTELLIGENT SYSTEM FOR DETECTING FUEL FRAUD AND IDENTIFYING NEARBY FUEL STATIONS <sup>1</sup> K SRAVANI, <sup>2</sup> M RAMA LAKSHMI, <sup>3</sup> M JACINTH, <sup>4</sup> P SUBBA RAMI REDDY, <sup>5</sup> R N V SAI KUMAR GMR INSTITUTE OF TECHNOLOGY, INDIA	37
IC19-113	ENHANCEMENT OF ANTIPODAL VIVALDI ANTENNA PERFORMANCE FOR WIRELESS APPLICATIONS <sup>1</sup> NAVIN DUWADI NEPAL OPEN UNIVERSITY, NEPAL	38
IC19-121	SMART HEALTH INSURANCE PREDICTION: UTILIZING XGBOOST FOR RISK AND PREMIUM OPTIMIZATION <sup>1</sup> BHAVYA KADIYALA UTHSC, MEMPHIS, TN, USA	39
IC19-052	LINING OF INDUSTRIAL CHIMNEY WITH THERMAL RESISTANCE GLASS BLOCK <sup>1</sup> MUHAMMAD MUJAHID, <sup>2</sup> ELEGBELEYE FEMI ABIODUN WALTER SISULU UNIVERSITY, SOUTH AFRICA	40
IC19-162	REVAMPING METHODS FOR STEEL SLAG DISPOSAL IN CONSTRUCTION <sup>1</sup> D BALAMURUGAN, <sup>2</sup> Y DEVANRAJ, <sup>3</sup> S ARULKUMARAN IFET COLLEGE OF ENGINEERING, INDIA	41

International Conference on Veracity Research in Scientific Computation and Engineering Trends (ICVRSCET-2019)

IC19-079	BEWELL MOBILE APPLICATION FOR INTER-LINKING	
	HOSPITALS	42
	<sup>1</sup> AKANKSHA MEHNDIRATTA, <sup>2</sup> PRADNYA KULKARNI	
	JAYPEE INSTITUTE OF INFORMATION TECHNOLOGY, INDIA	
IC19-110	FRAMEWORK FOR EXPERT NOVEL ENGRAVING USING	
	MASTERPRINT	43
	<sup>1</sup> YASSINE HABCHI	
	NAAMA CENTRE UNIVERSITY, ALGERIA	
IC19-040	SIGNCRYPTION AND PROXY RE-ENCRYPTION FOR SECURE	
	DATA SHARING USING BBS ALGORITHM	44
	R SURESH, 2P LAKSHMIPRIYA	
	IFET COLLEGE OF ENGINEERING, INDIA	
IC19-159	SURVEY ON MACHINE LEARNING ALGORITHMS IN BREAST	
	CANCER DIAGNOSIS AND DEVELOPMENT OF A HYBRID	45
	APPROACH BASED ON FEATURE SELECTION	
	<sup>1</sup> KOWSHIK B, <sup>2</sup> SAVITHA V, <sup>3</sup> KARTHIKRAJ H, <sup>4</sup> PRIYA DHARSHINI G	
	SNS COLLEGE OF TECHNOLOGY, INDIA	
IC19-175	UTILIZATION OF BAGASSE ASH AS A BRICK MATERIAL FOR	
	SUSTAINABLE CONSTRUCTION	16
C	<sup>1</sup> OSCAR FAMOUS DARTEH	46
1010.007	ACCKA TECHNICAL UNIVERSITY, CHINA	
IC19-08/	COMPARISON OF STRUCTURAL DESIGN RESULTS BETWEEN E-	
(	TABS AND SAP 2000 SOFT WARE	47
	<sup>1</sup> ANDY SURYOWINOTO <sup>2</sup> SITI ZALEHA HARUN	
	INSTITUT TEKNOLOGI ADHI TAMA SURABAYA, INDONESIA	
IC19-022	BEHAVIORAL ANALYSIS OF HIGH VOLUME FLY ASH	
	CONCRETE BEAM	
		<b>48</b>
	<sup>1</sup> EDWIN A, <sup>2</sup> ANAND V, <sup>3</sup> KOTTEESWARAN S, <sup>4</sup> V SHEELA	
	KARUNYA INSTITUTE OF TECHNOLOGY AND SCIENCES,	
	INDIA	
IC19-105	VOICE INTERROGATION AND POWER EFFICIENCY WITH	
	SMART SENSE ALGORITHM FOR AI CONTROLLED SMART BIKE	40
	USING IUI	49
	<sup>1</sup> N ARIRAM <sup>2</sup> S PRAKASH	
	GKM COLLEGE OF ENGINEERING AND TECHNOLOGY INDIA	
IC19-047	MODELING, ANALYSIS AND DESIGN OF TRADITIONAL	
	MASONRY UNITS REINFORCED WITH NATURAL FIBERS	
	FOR WALLS	50
	<sup>1</sup> R RAVI, <sup>2</sup> SAARANYA KUMAR D,	
	<sup>3</sup> PRUDHVI KRISHNA V, <sup>4</sup> SAI NITHIN REDDY	
	SRM INSTITUTE OF SCIENCE AND TECHNOLOGY, INDIA	

IC19-155	STUDY ON DUCTILITY BEHAVIOR OF ENERGY EFFICIENT WALLS	
	<sup>1</sup> UPPALAPATI SUDHEER KUMAR	51
	SARDAR VALLABHBHAI NATIONAL INSTITUTE OF TECHNOLOGY. INDIA	
IC19-069	PORTABLE CHARGER FOR HANDHELD DEVICES USING	
	RADIO FREQUENCY ENERGY HARVESTING	
	<sup>1</sup> AARTHI M, <sup>2</sup> M DINESHKUMAR, <sup>3</sup> G LAKSHITHA,	
	<sup>4</sup> R LOGESWARAN	52
	M KUMARASAMY COLLEGE OF ENGINEERING, INDIA	
IC19-024	EXTENDED SLIDING MODE CONTROL SCHEME WITH	
	TORQUE RIPPLE REDUCTION FOR PERMANENT MAGNET	
	SYNCHRONOUS MOTOR	
		53
	<sup>1</sup> PROSPER HOEYI	
1010 101	CENTRAL UNIVERSITY OF TECHNOLOGY, SOUTH AFRICA	
IC19-131	ON-DUTY FORM MANAGEMENT SYSTEM FOR EDUCATIONAL	
	INSTITUTIONS	54
(	1A AMERTIANA DOUDUL 2N O DUADATILI 3D JENCY	54
	CNANASUNDADI <sup>4</sup> V MAHESWADI	
C	SNS COLLEGE OF TECHNOLOGY INDIA	
IC19-058	ANALYSIS OF WEAR PROPERTIES OF METAL MATRIX	
1017 050	COMPOSITE FOR AIRCRAFT WING	
(		55
	<sup>1</sup> DR K CHANDRASEKARAN, <sup>2</sup> R RAMANATHAN, <sup>3</sup> D SILAMBARASAN,	
	<sup>4</sup> R SIVA, <sup>5</sup> K SIVABHARATHI	
	M.A.M. SCHOOL OF ENGINEERING, INDIA	



# IC19-007: SMART DOCTOR APPOINTMENT AND NOTIFICATION SYSTEM

<sup>1</sup>SARANYA J, <sup>2</sup>SATHIYA P, <sup>3</sup>UDHAYA PRABHA V DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING SNS COLLEGE OF TECHNOLOGY, INDIA <u>saranyajagadeesan05@gmail.com</u>

#### ABSTRACT

The Smart Doctors Appointment and Notification System is an application designed to facilitate communication between doctors and patients. This system, accessible through both web and Android apps, allows patients to search for doctors, request appointments, and ask for prescriptions via their smartphones. The application also displays the patient's medical history and current treatment progress to the doctor. The primary goal of this research is to connect doctors and patients quickly, from any location, without involving third parties. It also provides a feature to reschedule appointments in case of emergencies and enhances doctor-patient consultations through video calls using web technologies. Additionally, the system supports online payment processing for consultations.

Keywords: Appointment Scheduling, Doctor-Patient Connection, Online Consultation, Rescheduling, Digital Payments.

### IC19-043: PERFORMANCE EVALUATION MODELING OF NORMAL AND HIGH STRENGTH BEAMS WITH MICRO REINFORCEMENT USING ARTIFICIAL NEURAL NETWORKS

<sup>1</sup>S SARASWATHY, <sup>2</sup>L SOUNDARI DEPARTMENT OF CIVIL ENGINEERING IFET COLLEGE OF ENGINEERING, INDIA <u>saranilla98@gmail.com</u>

#### ABSTRACT

This research investigates the use of an artificial neural network (ANN) model to predict the performance of normal and high strength concrete beams with micro reinforcement. The necessary data for ANN modeling was sourced from relevant literature. The backpropagation network with the Levenberg-Marquardt algorithm was selected for the model and implemented using MATLAB. A comparative analysis was performed between the experimental results and those predicted through ANN and regression models. Statistical indicators such as RMSE, R<sup>2</sup>, and MAPE were used to assess the prediction accuracy. The R<sup>2</sup> values obtained were within an acceptable range, indicating good correlation between the ANN predictions and experimental results. The regression models demonstrated high accuracy in predicting the performance parameters of both normal and high strength concrete beams with micro reinforcement, with results showing strong convergence with the experimental data.

Keywords: Neural Networks, Concrete, Prediction, Regression Models, Structural Performance.

> International Conference on Veracity Research in Scientific Computation and Engineering Trends (ICVRSCET-2019)

### IC19-129: AN ENHANCED NEURAL NETWORK ALGORITHM FOR SPAM DETECTION IN TWITTER DATA

<sup>1</sup>DHIVYA R, <sup>2</sup>GUNASELVI J, <sup>3</sup>S USHARANI DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING IFET COLLEGE OF ENGINEERING, INDIA

#### ABSTRACT

As online social networking becomes more popular, spammers target these platforms to disseminate spam posts. Twitter, one of the leading social networking sites, facilitates communication around topics and trends. Many existing spam filtering techniques on Twitter focus on identifying and blocking spammers, but these spammers can easily create new accounts and continue posting spam tweets. Therefore, robust spam detection methods are required at the tweet level to identify and prevent spam in real-time. Detecting spam at this level often involves defining relevant features and applying suitable machine learning algorithms. Recently, deep learning techniques have shown promising results in various natural language processing tasks. To leverage the advantages of both deep learning and traditional methods, we propose an ensemble approach for tweet-level spam detection. This approach utilizes five convolutional neural networks (CNNs) and one feature-based model, with each CNN employing different word embeddings (Glove, Word2Vec). The feature-based model uses content-based, user-based, and n-gram features. Our methodology combines deep learning and conventional feature-based models using a multilayer neural network as a meta-classifier.

Keywords: Classification, Social Media, Spam Detection, Twitter, Deep Learning.

> International Conference on Veracity Research in Scientific Computation and Engineering Trends (ICVRSCET-2019)

#### IC19-085: NUTRIENT ALLOCATION BASED ON QUALITY OF SERVICE USING DIGITALIZATION STRATEGIES

<sup>1</sup>PANJI BINTORO AISYAH UNIVERSITY, INDONESIA panjibintoro09@aisyahuniversity.ac.id

#### ABSTRACT

Food is vital for human health as it provides the energy required for the body. However, the increasing presence of harmful chemical substances in food has led to health issues, with children particularly affected by unhealthy eating habits. In this proposal, a system is designed to assess the quality of food using a pH sensor. The pH sensor is used to determine the pH value of the food and identify bacterial contamination. This system, intended for government use, allows for monitoring the quality of food in restaurants. It displays the results on a server and sends the pH value of the food through a GSM message. Additionally, the system can share the location of the restaurant, providing a comprehensive solution for food quality assessment.

Keywords: Food Quality, pH Sensor, Nutrient Allocation, Digitalization, Contamination Detection.

#### IC19-172: GESTURE MONITORING AND ANALYSIS FOR THE HEARING AND SPEECH IMPAIRED USING SENSOR-BASED TECHNOLOGY

<sup>1</sup>MOHAMMED RASHAD BAKER, <sup>2</sup>NILA FEBY PUSPITASARI DEPARTMENT OF COMPUTER SCIENCE AND INFORMATION TECHNOLOGY UNIVERSITY OF KIRKUK, IRAQ mohammed.rashad@uokirkuk.edu.ig

#### ABSTRACT

One of the key challenges in society today is the difficulty faced by people with disabilities in adapting to rapidly advancing technology. Access to communication technologies is essential for individuals with disabilities. Typically, deaf and mute individuals use sign language to communicate with others who do not understand it. Sign language is a natural and expressive form of communication, mainly conveyed through hand gestures. However, it often requires a translator for effective communication and monitoring. This system aims to bridge that gap by translating sign language into an understandable format for both deaf and non-deaf individuals. The proposed solution incorporates IoT technology to facilitate communication between deaf and mute individuals and others, using a sensor-based system for gesture recognition, allowing for easier and more efficient interaction through a mobile app.

Keywords: Gesture Recognition, Sign Language, Communication System, IoT, Sensor Technology.

International Conference on Veracity Research in Scientific Computation and Engineering Trends (ICVRSCET-2019)

#### IC19-056: VIDEO ANALYSIS FOR DETECTING MALPRACTICE IN CLASSROOM EXAMINATIONS

#### <sup>1</sup>K GOWSIKA, <sup>2</sup>S ISHWARYA IFET COLLEGE OF ENGINEERING, INDIA

## ABSTRACT

One of the significant challenges in examination systems is the occurrence of malpractices, often due to the lack of reliable identity verification, both in offline and online assessments. To address this issue, researchers have focused on incorporating artificial intelligence and biometric techniques. Previous studies have explored various methods for detecting malpractices during exams, with particular emphasis on image quality assessment for liveness detection. This technique helps identify malpractice by distinguishing between real and fake users in the exam hall. The proposed system is designed with key attributes such as uniqueness, stability, collectability, performance, acceptability, and resistance to forgery, ensuring accurate detection and preventing exam-related fraud.

Keywords: Malpractice Detection, Video Analysis, Identity Verification, Image Quality, Biometrics.

International Conference on Veracity Research in Scientific Computation and Engineering Trends (ICVRSCET-2019)

#### IC19-034: A SURVEY ON SENTIMENT ANALYSIS USING DEEP LEARNING APPROACHES

#### <sup>1</sup>KALAIVANI A, <sup>2</sup>THENMOZHI D SSN COLLEGE OF ENGINEERING, INDIA <u>kalaiwind@gmail.com</u>

#### ABSTRACT

The field of opinion mining and sentiment analysis has witnessed significant growth, aiming to analyze textual data or opinions from various social media platforms through machine learning (ML) techniques, including polarity calculations and sentiment or subjectivity analysis. Sentiment analysis (SA) refers to the process of categorizing emotions or attitudes expressed in text, such as positive, negative, or neutral sentiments. This complex task involves several components, including natural language processing (NLP), web mining, and machine learning (ML). To address these challenges, SA is increasingly integrated with deep learning (DL) techniques, which are known for their automatic learning capabilities. This paper reviews recent research on the application of DL models like deep neural networks (DNN), deep-belief networks (DBN), convolutional neural networks (CNN), and recurrent neural networks (RNN) in solving SA-related issues, such as sentiment classification. It also compares various classification methods like rule-based classifiers (RBC), KNN, and SVM in terms of performance and accuracy.

Keywords: Sentiment Analysis, Opinion Mining, Deep Learning, Sentiment Classification, Machine Learning.

## IC19-160: IOT-BASED SYSTEM FOR PREDICTING MECHANICAL FAILURES IN VEHICLES AND ENSURING TIMELY REPLACEMENTS

#### <sup>1</sup>S S AKILAN, <sup>2</sup>D KAYATHRI DEVI DEPARTMENT OF COMPUTER APPLICATIONS KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY, INDIA

#### ABSTRACT

With the growing need to monitor mechanical failures in vehicles to enhance customer safety and prevent accidents, research in the field of IoT-based solutions has gained momentum. Mechanical failures in vehicles can arise from various factors, and this study proposes an IoT framework designed to provide quick and effective recovery from common critical failures. The proposed system utilizes a combination of sensors and microcontrollers (MC) to continuously monitor vital vehicle parameters. The data collected by these sensors is analyzed to predict potential future failures. This research demonstrates promising results in accurately predicting vehicle failures, enabling timely interventions and replacements to ensure vehicle safety.

Keywords: Failure Prediction, Vehicle Monitoring, IoT, Data Mining, Mechanical Failures.

International Conference on Veracity Research in Scientific Computation and Engineering Trends (ICVRSCET-2019)

# IC19-119: CUSTOMER COMPLAINT MANAGEMENT SYSTEM: AN INTEGRATED APPROACH

<sup>1</sup>S POOJA, <sup>2</sup>K S POOJA, <sup>3</sup>S PREM KUMAR, <sup>4</sup>B MADHANKUMAR, <sup>5</sup>B. VIVEK SNS COLLEGE OF TECHNOLOGY, INDIA poojasiva.9876@gmail.com

#### ABSTRACT

In today's competitive market, firms aim to enhance customer satisfaction, increase productivity, and boost repeat purchases. To achieve this, a system is developed to efficiently manage customer complaints and feedback. The system processes complaints related to specific products, with employees of the company providing relevant responses. If a customer submits a follow-up complaint, it is forwarded to the complaint centers of the respective firm, where it is reviewed by the relevant product department. Additionally, the system tracks and displays the status of each recorded complaint, ensuring timely resolutions and transparent communication with customers.

Keywords: Customer Satisfaction, Complaint Management, Feedback System, Employee Interaction, Customer Service.

> International Conference on Veracity Research in Scientific Computation and Engineering Trends (ICVRSCET-2019)

## IC19-077: ENHANCING MANET PERFORMANCE BY REDUCING ROUTING OVERHEAD USING ARPRP PRINCIPLE

<sup>1</sup>B VINODHINI, <sup>2</sup>DR M MARIKKANNAN, <sup>3</sup>DR S KARTHIK SNS COLLEGE OF TECHNOLOGY, INDIA vinodhini.raja@gmail.com

#### ABSTRACT

A Mobile Adhoc Network (MANET) is a collection of mobile nodes that form a temporary network without relying on infrastructure. Due to the fast movement of nodes, connections frequently break, leading to recurrent path failures and route discoveries. Broadcasting is typically used for route discovery but often leads to broadcast storm problems. To address this issue, the Adjacent Rebroadcast Probabilistic Rebroadcast Protocol (ARPRP) is employed, which reduces routing overhead and manages route discovery efficiently. In MANETs, node mobility and the dynamic entry or exit of nodes lead to frequent changes in the network. The system relies on intermediate nodes to forward data packets, meaning the failure of any intermediate node can disrupt the path, causing data loss and degrading system performance. The proposed solution uses a path repair approach combined with the AMRIS (Informal Multicast Routing Protocol with extended IDs) protocol to minimize retransmissions, reduce delays, improve packet delivery ratio, and increase throughput. This results in significant improvements in the network's overall performance and efficiency.

Keywords: MANET, ARPRP Protocol, Path Repair, Routing Overhead, AMRIS Protocol.

International Conference on Veracity Research in Scientific Computation and Engineering Trends (ICVRSCET-2019)

### IC19-101: HUMAN PRESENCE DETECTION IN REMOTE AREAS USING REMOTE SENSING TECHNOLOGY

<sup>1</sup>S SUMATHI, <sup>2</sup>DR S KARTHIK, <sup>3</sup>J ALFRED DANIEL SNS COLLEGE OF TECHNOLOGY, INDIA <u>srimathi\_2k4@rediffmail.com</u>

#### ABSTRACT

In today's technology-driven world, the rise in valuable possessions has also led to an increase in manmade disasters, such as theft, smuggling, human trafficking, and bomb blasts. These activities are often planned and executed by groups of people in remote or forested areas where human presence is minimal or absent, making manual monitoring impractical. It is difficult to predict where these activities may occur, and relying on human resources for constant surveillance is not efficient. Therefore, there is a need for a system that can automatically monitor human presence in such areas to prevent potential disasters. This paper explores various mechanisms for detecting human presence and proposes a model utilizing Microwave Doppler radar technology sensors to send alerts, enabling timely responses without manual intervention, thus reducing the cost of implementation.

Keywords: Human Presence Detection, Doppler Radar, Remote Sensing, Microwave Technology, Remote Monitoring.

International Conference on Veracity Research in Scientific Computation and Engineering Trends (ICVRSCET-2019)

## IC19-064: A SMART ANDROID APPLICATION FOR STUDENT ASSISTANT SYSTEM IN EDUCATIONAL INSTITUTIONS

<sup>1</sup>R REETHU, <sup>2</sup>D PREETHA, <sup>3</sup>P PARAMESHWARAN, SNS COLLEGE OF TECHNOLOGY, INDIA <u>reethuraju1327@gmail.com</u>

## ABSTRACT

The aim of this paper is to leverage emerging technologies to improve and enhance the education system, particularly in India, where educational technology has seen significant growth in recent years. An Android-based mobile application has been developed as part of this study. The application offers features such as viewing student profiles, storing attendance, saving notes, calculating CGPA, and scheduling classes. This application provides a practical solution for educational institutions to manage and maintain student data efficiently, improving overall administrative processes and student engagement.

Keywords: Student Management, Android Application, Attendance Tracking, CGPA Calculation, Class Scheduling.



## IC19-146: HIGH-SPEED MULTIPLIER DESIGN USING KOGGE STONE ADDER

<sup>1</sup>R ARUN SEKAR, <sup>2</sup>M KATHIRVELU, <sup>3</sup>M GOVINDA, <sup>4</sup>V KRISHNA CHAITANYA, <sup>5</sup>T BHAGYASRI GMR INSTITUTE OF TECHNOLOGY, INDIA

#### ABSTRACT

Multipliers are crucial components in high-speed computational devices, primarily composed of combinational circuits. Due to their large circuit design and high gate and transistor density, multipliers tend to occupy significant active areas, leading to increased power dissipation. To address this concern, the goal is to reduce power dissipation while maintaining high performance. In this study, a high-speed multiplier is designed using the Kogge Stone adder, a fast parallel prefix adder. Various adders are compared in terms of speed, and the Kogge Stone adder is found to be the most efficient. To further enhance speed, the adder component of the Vedic multiplier is replaced with the Kogge Stone adder, resulting in a hybrid high-speed Vedic multiplier. The proposed hybrid multiplier demonstrates improved efficiency in terms of power consumption, delay, and power-delay product.

Keywords: Kogge Stone Adder, Vedic Multiplier, Power Dissipation, High-Speed Multiplier, Power-Delay Product.

#### IC19-027: WEB APPLICATION FOR OPINION MINING AND SENTIMENT ANALYSIS OF AUTOMOBILE REVIEWS

#### <sup>1</sup>NITHIN, <sup>2</sup>S KEERTHANA SRI, <sup>3</sup>P POONKODI DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING SNS COLLEGE OF TECHNOLOGY, INDIA

#### ABSTRACT

Data has significantly transformed human lifestyles in this technological era and continues to evolve. It plays a crucial role in providing analytical insights and predictive solutions, acting as evidence of human progress. With the rise of various technologies, tools, and techniques like data mining, big data, and data analytics, extracting valuable information from vast amounts of data has become more efficient. In this paper, we focus on utilizing machine learning, specifically sentiment analysis and natural language processing (NLP), to improve automobile product standards based on customer feedback. The reviews for automobile products are collected from a web application, processed as text data, and analyzed using sentiment analysis algorithms. This approach helps in determining the bias of reviews, categorizing them into positive, negative, or neutral sentiments, and extracting valuable insights for product improvement.

Keywords: Opinion Mining, Sentiment Analysis, Automobile Reviews, Machine Learning, Natural Language Processing.

International Conference on Veracity Research in Scientific Computation and Engineering Trends (ICVRSCET-2019)

## IC19-093: STRESS DETECTION THROUGH SOCIAL INTERACTION ON SOCIAL MEDIA

<sup>1</sup>A SHOBIYA PRIYADHARSHINI, <sup>2</sup>K SWATHI, <sup>3</sup>D THIVEYA DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING SNS COLLEGE OF TECHNOLOGY, INDIA <u>amupriyasofia007@gmail.com</u>

#### ABSTRACT

Psychological stress refers to emotional and mental responses that individuals experience in stressful situations, posing a significant threat to human health. Research shows that people's stress levels are closely linked to their social interactions on social media platforms. This paper presents a model that uses a dataset to analyze the relationship between user stress and social interactions, enabling stress level detection through graphical representations. When the user experiences high stress, the system alerts them with a reminder and suggests relaxation techniques. Experimental results demonstrate that our proposed model improves stress detection performance by 10-13%. Unlike existing models, our approach uses a dynamic method to analyze the volume of posts, enhancing accuracy in stress detection.

Keywords: Stress Detection, Social Media, Social Interaction, Relaxation Techniques, Graphical Representation.

> International Conference on Veracity Research in Scientific Computation and Engineering Trends (ICVRSCET-2019)

## IC19-150: SMART APPROACH FOR REPORTING AND RECTIFYING COMMUNITY ISSUES THROUGH AN ONLINE APPLICATION

#### <sup>1</sup>V ANGELICA GARCIA VEGA UNIVERSIDAD VERACRUZANA, MEXICO <u>angegarcia@uv.mx</u>

#### ABSTRACT

Reporting community issues such as road damage, potholes, garbage overflow, and streetlight malfunctions has often been a complex and time-consuming process. People typically have to follow lengthy procedures and adhere to various protocols to report these problems, with no guarantee that the concerns will be addressed by the relevant authorities. This often leads to complaints going unheard or unanswered. To streamline this process, we propose the implementation of an online application that allows citizens to easily report issues related to infrastructure, transportation, cleanliness, and other everyday disruptions. Through this mobile application, users can directly register complaints, engage in discussions, and ensure timely resolution by the concerned authorities via the online portal.

Keywords: Community Issues, Online Portal, Complaint Reporting, Mobile Application, Public Services.

International Conference on Veracity Research in Scientific Computation and Engineering Trends (ICVRSCET-2019)

#### IC19-115: STUDY ON WASTE REDUCTION COATING FOR RCC SILOS USING POLYURETHANE LINING

<sup>1</sup>KUMAR PRASUN PADMAKANYA MULTIPLE CAMPUS, NEPAL <u>erkprasun@gmail.com</u>

## ABSTRACT

Elevated reinforced concrete (RC) silos play a crucial role in production industries, particularly in power generation, where the demand for thermal power plants is rapidly increasing. These plants generate large amounts of waste, such as fly ash, which needs to be stored efficiently. To store this ash, a well-designed silo is required to meet the operational needs of the power plant. Special consideration is needed in the design and analysis of silos due to their height and the heavy loads they carry. Tall RC silos with partially tapered sections are more susceptible to wind, seismic, and temperature effects, making them more critical than fully tapered silos, which exhibit minimal displacement. Polyurethane lining is used in these silos to reduce the wastage of fly ash, prevent abrasion, and improve the overall efficiency of the silo's operation.

Keywords: RCC Silos, Polyurethane Lining, Fly Ash, Structural Efficiency, Waste Reduction.

> International Conference on Veracity Research in Scientific Computation and Engineering Trends (ICVRSCET-2019)

## IC19-038: EXPERIMENTAL INVESTIGATION ON LIGHTWEIGHT FOAMED CONCRETE

<sup>1</sup>BABATOUNDÉ O. SIMON BIAOU, <sup>2</sup>TEMIDAYO OLUWATOSIN OBAFEMI AWOLOWO UNIVERSITY, NIGERIA <u>bsbiaou@pg-student.oauife.edu.ng</u>

#### ABSTRACT

Foam concrete is a type of aerated lightweight concrete that does not contain coarse aggregates and can be considered an aerated mortar. It is produced by adding pre-formed foam to a cement slurry, with the foam creating air voids in the mixture. This study investigates the use of Palm Oil Fuel Ash (POFA) and Rice Husk Ash as partial replacements for cement in foamed concrete production. Experiments were conducted with 5% and 10% replacements of POFA and 10% and 15% replacements of Rice Husk Ash by Portland pozzolan cement. The results show that POFA and Rice Husk Ash can effectively be used in the production of foamed concrete. The density of the foam concrete is influenced by the amount of foam added to the cement and sand mixture. Compression tests on cubes were performed to evaluate the compressive strength of foamed concrete with POFA and Rice Husk Ash, and the results were compared to conventional foam concrete.

Keywords: Foam Concrete, Lightweight Concrete, Rice Husk Ash, POFA, Compressive Strength.

## IC19-081: EXPERIMENTAL STUDY ON PARTIAL REPLACEMENT OF FINE AGGREGATE WITH FOUNDRY SAND M-SAND AND COARSE AGGREGATE WITH STEEL SLAG IN CONCRETE

<sup>1</sup>SONAL YADAV NATIONAL INSTITUTE OF TECHNOLOGY RAIPUR, INDIA <u>syadav.cse@nitrr.ac.in</u>

## ABSTRACT

In India, conventional cement is produced using natural river sand as fine aggregate. A new trend in low-cost concrete production involves replacing fine sand with foundry sand, which helps reduce disposal and pollution problems. Steel slag, a byproduct of the steel manufacturing industry, is generated in large quantities globally during the metal refining and alloy production processes. This study investigates the behavior of concrete when incorporating waste materials, specifically foundry sand, M-sand, and steel slag, in various proportions. The experimental study examines the partial replacement of fine aggregate with foundry sand (50%, 100%) and coarse aggregate with steel slag (40%), comparing it with the use of M-sand (50%, 100%) and steel slag (40%) in M25 grade concrete with a mix ratio of 1:1.58:2.72. Concrete cubes measuring 150mm x 150mm were tested for compressive strength after 28 days of curing.

Keywords: Foundry Sand, M-Sand, Steel Slag, Compressive Strength, Concrete.

> International Conference on Veracity Research in Scientific Computation and Engineering Trends (ICVRSCET-2019)

## IC19-170: EFFICIENT AND PRIVACY-PRESERVING ONLINE FINGERPRINT AUTHENTICATION SCHEME FOR OUTSOURCED DATA

#### <sup>1</sup>SHAMILI S, <sup>2</sup>SANGEETHA N, <sup>3</sup>SHALINI R, <sup>4</sup>R SENTHILKUMAR DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING SNS COLLEGE OF TECHNOLOGY, INDIA <u>shamishamu3@gmail.com</u>

#### ABSTRACT

With the advancement of biometric technology, fingerprint recognition has become a key method of authentication, relying on the unique personal characteristics of individuals. However, the privacy concerns surrounding biometric data have grown due to its highly sensitive nature. To address these concerns, we propose a system for encrypted data outsourcing using fingerprint authentication. In this system, the authentication process is secured by transmitting fingerprints to outsourced entities for verification purposes. Euclidean distance calculation is employed as a tool to achieve secure authentication based on personal traits, ensuring the system can resist various security threats. Additionally, the online fingerprint authentication system is implemented across multiple outsourced servers with real images, providing efficient and accurate results for online fingerprint verification.

Keywords: Privacy-Preserving, Fingerprint Authentication, Online Authentication, Encrypted Data, Outsourcing.

## IC19-111: EXPERIMENTAL STUDY ON THE BEHAVIOR OF CONCRETE REINFORCED WITH BRISTLE COIR FIBERS

<sup>1</sup>M SWATHI1, <sup>2</sup>S KOTTEESWARAN DEPARTMENT OF CIVIL ENGINEERING SRM INSTITUTE OF SCIENCE AND TECHNOLOGY, INDIA jswathi315@gmail.com

#### ABSTRACT

A common statement in civil engineering is that "concrete is strong in compression but weak in tension." This brittleness is one of the reasons that led to the development of fiber-reinforced concrete. Fibers are small, discontinuous materials that are uniformly distributed and randomly oriented in concrete to improve structural integrity, tensile strength, and reduce porosity. Recent advances in fiber-reinforced concrete have focused on the use of natural materials, including nylon, polypropylene, and coir fibers, as well as even human hair. These natural fibers address the drawbacks of steel fibers, such as their high cost and susceptibility to corrosion. Coir fibers have shown significant improvements in the mechanical and durability properties of concrete. Bristle coir fibers, derived from coconut husks and used for making bristle brushes, are particularly strong and stiff. This study explores the potential of bristle coir fibers as reinforcement in concrete, aiming to enhance its mechanical properties compared to other natural fibers and identify the optimal fiber percentage.

Keywords: Fiber Reinforced Concrete, Coir Fiber, Bristle Coir Fiber, Concrete Reinforcement, Mechanical Properties.

## IC19-054: PERFORMANCE EVALUATION OF STEEL-CONCRETE COMPOSITE AND PRESTRESSED CONCRETE BRIDGES WITH IRC LOADING

#### <sup>1</sup>S SANDHIYA, <sup>2</sup>S KOTTEESWARAN DEPARTMENT OF CIVIL ENGINEERING SRM INSTITUTE OF SCIENCE AND TECHNOLOGY, INDIA <u>rsandhiya609@gmail.com</u>

#### ABSTRACT

Bridges are essential structures for transportation, and their performance and behavior vary depending on their type. Prestressed post-tensioned bridges and composite bridges each have distinct characteristics, which are studied in this research. The study compares results obtained through analytical and experimental methods. The analysis is based on the construction sequence of the bridges, with live load analysis conducted according to IRC loading standards. The analytical method involves creating a model using STAAD Pro software to analyze the structure, producing outputs such as bending moments and shear forces, which are then used to calculate stresses and deflections. The experimental method involves casting a scaled model of the girder and testing it with scaled loads based on T-beam and L-beam distributions on the girders. The experimental results are compared with the analytical results to assess the actual performance of the bridges. At this stage, the analytical method has been completed, and the results are presented for discussion.

**Keywords:** Prestressed Concrete Bridges, Composite Bridges, STAAD Pro Analysis, IRC Loading, Structural Performance.

> International Conference on Veracity Research in Scientific Computation and Engineering Trends (ICVRSCET-2019)

## IC19-132: CENTRAL PORTAL FOR COMPREHENSIVE LENDING PAYMENT MANAGEMENT

<sup>1</sup>D YUVARAJ, <sup>2</sup>T MANISHA, <sup>3</sup>P KARTHIKEYAN, <sup>4</sup>C MADHUMITHA DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING SNS COLLEGE OF TECHNOLOGY, INDIA <u>manishathiru63@gmail.com</u>

#### ABSTRACT

This paper outlines a credit information system that leverages machine learning to streamline the lending process. The system utilizes a web application that minimizes manual work by automating credit applications. Clients wishing to apply for credit can submit their necessary documents and details, which are then processed according to user-defined terms and conditions. Once the details are submitted, a backend algorithm analyzes the information to identify whether it is original or duplicated. If the details are verified as original, the request is automatically sent to the central server. The central server acts as an intermediary between the user portal and the lending provisions, forwarding the details to the relevant provision for authentication. After verification, the lender confirms the acceptance of the details, and a notification is sent to the user. Clients can then choose the credit options that match their criteria and proceed with further steps.

Keywords: Credit Information System, Web Application, Machine Learning, Lending Payment, Automation.

International Conference on Veracity Research in Scientific Computation and Engineering Trends (ICVRSCET-2019)

## IC19-020: IOT-BASED SMART AGRICULTURE CONTROL AND DIRECT MARKETING SYSTEM

#### <sup>1</sup>VISHAL BADGUJAR UNIVERSITY OF MUMBAI, INDIA <u>vishalbadgujar4@gmail.com</u>

#### ABSTRACT

Agriculture remains the primary occupation in our country, but factors such as population pressure, unpredictable monsoons, inadequate irrigation, and exploitation by middlemen hinder its practice. To address these challenges, we propose a smart agricultural system using IoT technology. This system incorporates various features such as GPS and GSM-based remote monitoring, moisture, pest, and temperature sensing, intruder deterrents, irrigation control, and direct marketing by sharing the relevant parameters with customers. Sensor nodes are strategically placed across the farm to monitor these factors. The system allows for remote control of these parameters via internet-connected devices, with operations managed by integrated sensors, Wi-Fi, cameras, and a microcontroller. This concept is designed to benefit farmers and enhance their agricultural practices.

Keywords: Smart Agriculture, IoT, Sensors, Remote Monitoring, Direct Marketing.



## IC19-142: ACID-RESISTANT BRICKS AND TILES USING INDUSTRIAL WASTE MATERIALS

<sup>1</sup>DR SHARMILA SHARAD MORE MIT ARTS, COMMERCE & SCIENCE COLLEGE, INDIA <u>sharmilamore22@ycis.ac.in</u>

#### ABSTRACT

The rapid increase in industrial waste is a major environmental concern. One potential solution is incorporating such waste into the production of building materials. Waste recycling has gained significant interest due to its environmental and economic benefits. This study explores the use of granite sludge powder, quarry dust, silica sand, and white clay in the production of acid-resistant bricks and tiles. By varying the composition of raw materials, different samples were produced, and various tests were conducted, including compression, flexural, water absorption, and acid mass loss tests. The results indicate that the produced bricks and tiles show excellent acid resistance in both HCL and H2SO4 media, in accordance with IS:4860-1968 standards, while also being cost-effective.

**Keywords:** Industrial Waste, Granite Sludge Powder, Acid Resistance, Building Materials, Cost-Effective Production.

#### IC19-168: DESIGN AND ANALYSIS OF RESIDENTIAL BUILDING FOR DETONATION SKIRMISH PROTECTION

#### <sup>1</sup>KAMAL HOSSAIN, <sup>2</sup>SAMEER FAROOQ NATIONAL INSTITUTE OF TECHNOLOGY ROURKELA, INDIA <u>kamaljmi27@gmail.com</u>

## ABSTRACT

Terrorism remains one of the most significant global threats, causing widespread insecurity. Despite advancements in technology and counter-intelligence efforts, the issue persists. Blast forces can severely compromise the structural integrity of buildings, often leading to the partial or complete collapse of structural components. The impact of blast loads on buildings is a critical consideration during the design phase. Although such attacks are rare, blast loads are powerful forces that need to be treated with the same seriousness as earthquake or wind loads. This study focuses on the design of buildings that are resistant to explosions, enhancing both the architectural and structural security. Additionally, the building's safety is analyzed using force-time history in STAAD Pro software.

Keywords: Terrorism, Blast Forces, Dynamic Loads, Structural Safety, Security Design.

## IC19-049: EVALUATION OF GROUNDWATER QUALITY AND ITS SUITABILITY FOR DOMESTIC AND IRRIGATION USE

<sup>1</sup>M ARUMAISELVI, <sup>2</sup>R R THARIN DEPARTMENT OF CIVIL ENGINEERING IFET COLLEGE OF ENGINEERING, INDIA <u>arumai1998@gmail.com</u>

#### ABSTRACT

This study evaluates the quality of groundwater and its suitability for domestic and irrigation purposes in a district, an area selected due to its vulnerability to seawater intrusion. The study includes an analysis of the impacts of seawater intrusion on groundwater quality in the region. Groundwater samples were collected from various sources, including bore wells, hand pumps, dug wells, and irrigation water. These samples provide information on the presence of salts, acids, and other components in the water. Some samples were found suitable for drinking, while others were appropriate for agricultural use. Water samples were collected at different times and from various locations, using polythene containers. Both physical and chemical analyses, including testing for fluoride, chloride, total dissolved solids, total hardness, pH, and calcium, were performed. The results indicate variations in groundwater quality, with some samples suitable for domestic use and others for irrigation. The paper discusses the characteristics and suitability of groundwater for both uses.

Keywords: Groundwater Quality, Seawater Intrusion, Domestic Water, Irrigation Water, Water Analysis.

> International Conference on Veracity Research in Scientific Computation and Engineering Trends (ICVRSCET-2019)

## IC19-003: EXPERIMENTAL STUDY ON PARTIAL CEMENT REPLACEMENT WITH BAGASSE ASH AND FINE AGGREGATE REPLACEMENT WITH PRESS MUD IN CONCRETE

<sup>1</sup>LEONARDO DE LELLIS ROSSI, <sup>2</sup>GABRIEL JOSÉ PELLISSER DALALANA UNIVERSITY OF SÃO PAULO (USP), BRAZIL gabriel.jp.dalalana@usp.br

#### ABSTRACT

Environmental degradation has become a significant issue, negatively impacting human living standards. One of the main contributors to environmental pollution is the emission of carbon dioxide during cement production. To address this issue, partial replacement of cement with bagasse ash has been explored as a way to reduce CO2 emissions. This study investigates the compressive strength of concrete with 10%, 20%, and 30% cement replacement by bagasse ash. Although cement consumption is reduced, the sustainability of concrete production remains a challenge due to the high demand for sand. To mitigate this, fine aggregate was partially replaced by press mud in amounts of 5%, 10%, and 15%. The results indicate that this replacement improves both the workability and compressive strength of the concrete. Therefore, the partial substitution of both press mud and bagasse ash in concrete improves strength while reducing environmental impact.

Keywords: Bagasse Ash, Press Mud, Compressive Strength, Workability, Environmental Impact.

> International Conference on Veracity Research in Scientific Computation and Engineering Trends (ICVRSCET-2019)

#### IC19-137: APPROACH FOR SMART SPY CAMERA DETECTION USING PROXIMITY SENSOR IN CCTV SYSTEMS

<sup>1</sup>IBRALEBBE MOHAMED KALITH, <sup>2</sup>ESMOT ARA TULI SOUTH EASTERN UNIVERSITY, SRI LANKA <u>imkalith@seu.ac.lk</u>

#### ABSTRACT

CCTV cameras are widely used for safety and security purposes, providing continuous surveillance in various locations. This paper presents a system aimed at enhancing security in theaters by detecting hidden spy cameras. By integrating real-time systems and long-duration recordings, this approach utilizes CCTV cameras to identify recording devices such as mobile phones, nano cameras, and micro cameras. A night vision camera is employed for hidden camera detection through image processing. Additionally, a proximity sensor is used to identify individuals recording movies in the theater. If a recording device is detected, an alert is immediately sent to the control room. The proximity sensor works by emitting an electromagnetic or infrared field and sending a signal to the control room when changes in the field are detected, allowing for non-contact detection of unauthorized recording activities.

Keywords: Spy Camera Detection, CCTV Systems, Proximity Sensor, Image Processing, Theater Security.

#### IC19-091: EXPERIMENTAL INVESTIGATION AND TESTING OF FERROCEMENT SLABS AND DOMES

#### <sup>1</sup>DIVYA, <sup>2</sup>S KOTTEESWARAN SRM INSTITUTE OF SCIENCE AND TECHNOLOGY, INDIA

## ABSTRACT

Ferrocement is a composite material consisting of a cement matrix reinforced with multiple layers of mesh, providing durability and strength due to its thin design and wide distribution of steel reinforcement throughout the mortar. This project focuses on studying the flexural behavior of Ferrocement domes. The technique is labor-intensive, as the mortar is typically applied by hand, although spray application is also possible. Ferrocement is commonly used in developing countries where labor costs are low. In the West, it is primarily used for boat hulls, including racing yachts, as well as for roof shells and decorative applications. A model was developed and tested to assess the flexural behavior of Ferrocement structures. High-strength mortar was created by partially replacing cement with Ground Granulated Blast-Furnace Slag (GGBS) and adding silica fume to the mix. The strength of the mortar was determined through compressive testing, and it was used to cast Ferrocement slabs for flexural and impact behavior testing. The results showed that the Ferrocement slabs exhibited pure shear failure under flexural testing and pure punching failure under impact testing. A Ferrocement dome model was also created and analyzed, with experimental results compared to analytical predictions.

Keywords: Ferrocement, GGBS, Roof Shells, Flexural Behavior, Composite Material.

> International Conference on Veracity Research in Scientific Computation and Engineering Trends (ICVRSCET-2019)

## IC19-123: FINGERPRINT-BASED LICENSE AND HELMET DETECTION ANTI- THEFT SYSTEM

#### <sup>1</sup>RONALD CHIWARIRO, <sup>2</sup>PROSPER TAFADZWA DENHERE MANICALAND STATE UNIVERSITY OF APPLIED SCIENCES, ZIMBABWE <u>chiwariro@gmail.com</u>

## ABSTRACT

To reduce the number of unauthorized drivers and prevent accidents, a new system is proposed that focuses on driver identification and verification. Fingerprint identification is one of the most popular and secure methods used in various security fields, particularly in biometric verification. The system is designed for vehicles such as cars and motorcycles, where the device reads and stores the driver's fingerprint in memory for authentication. Additionally, the driver is required to wear a helmet, and the system detects the presence of the helmet using a switch. Only when both conditions are met—valid fingerprint and helmet detection—will the vehicle start; otherwise, the ignition will remain disabled.

Keywords: Fingerprint Identification, Anti-Theft System, Helmet Detection, Vehicle Security, Ignition Control.

#### IC19-030: EFFECTIVE PREDICTION OF PARKINSON'S DISEASE USING DATA MINING ANALYTICAL TOOLS

#### <sup>1</sup>A VISHALI, <sup>2</sup>G NITHIY, <sup>3</sup>P RENUKADEVI DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING PAAVAI ENGINEERING COLLEGE, INDIA

#### ABSTRACT

Data mining involves discovering valuable knowledge from databases to build models or patterns that can meaningfully interpret data. It is the process of identifying interesting patterns and insights from large datasets. These techniques are typically divided into three main categories: supervised learning, unsupervised learning, and semi-supervised learning. Expert systems developed through machine learning can assist physicians in diagnosing and predicting diseases. Given the critical nature of disease diagnosis, various studies have focused on creating methods for disease classification. Standard supervised techniques, such as K-means clustering, do not support incremental learning and thus require the recalculation of all training data to build prediction models. This study presents a method evaluated using publicly available datasets from UCI, containing input and output parameters for Parkinson's Disease diagnosis.

Keywords: Data Mining, Parkinson's Disease Prediction, Disease Diagnosis, Support Vector Machines, Machine Learning.

International Conference on Veracity Research in Scientific Computation and Engineering Trends (ICVRSCET-2019)

### IC19-176: STYLE ENHANCEMENT USING VIRTUAL MIRROR TECHNOLOGY

#### <sup>1</sup>GARY LOH CHEE WYAI, <sup>2</sup>ASMA KAUSAR MUKHTAR ALI UNIVERSITY OF TECHNOLOGY SARAWAK, MALAYSIA <u>gary@uts.edu.my</u>

#### ABSTRACT

This system allows users to shop online smartly by trying on various accessories like sunglasses, hats, and necklaces using their webcam. The technology utilizes face detection algorithms, such as Viola-Jones, to automatically place the selected accessories on the user's face or other body parts. This unique feature enhances the shopping experience and makes the system stand out as a completely different platform from other existing websites.

Keywords: Online Shopping, Face Detection, Virtual Mirror, Fashion Accessories, Ecommerce,



International Conference on Veracity Research in Scientific Computation and Engineering Trends (ICVRSCET-2019)

## IC19-088: X-RAY IMAGE REPORTING SYSTEM USING ASP.NET AND SQL SERVER

#### <sup>1</sup>NOWSHAD HASAN, <sup>2</sup>MUHAMMAD SAJJADUR RAHIM CHITTAGONG UNIVERSITY OF ENGINEERING AND TECHNOLOGY, BANGLADESH <u>nowshad.ete@gmail.com</u>

#### ABSTRACT

The project titled "X-ray Image Reporting" utilizes ASP.NET as the front-end and SQL Server as the back-end. Modern clinical examinations in medicine rely on patient data and various imaging diagnostic modalities. However, medical data systems are not typically designed for clinical trials that involve medical imaging. While commercial software and communication systems focus on storing image data, they are not suitable for the storage and analysis of new types of quantitative data. This project aims to design a web-based tool to support diagnostic clinical trials involving multiple specialists and hospitals or research centers. The image analysis in this project is based on skeletal X-ray imaging, using automated image techniques and quantitative analysis of areas of interest in solid bone and skeletal metastases. The system is developed using ASP.NET 3.5 and C# for the web application, with SQL Server as the database for data storage. To ensure security, all data transmissions are encrypted, and user logins are required to track patient data access. This web tool allows users from different locations to efficiently organize and store case report forms and images, providing users with a clear understanding of the project.

Keywords: X-ray Image Analysis, ASP.NET, SQL Server, Medical Imaging, Web-Based Application.

International Conference on Veracity Research in Scientific Computation and Engineering Trends (ICVRSCET-2019)

### IC19-014: HOME APPLIANCE AUTOMATION WITH EXTENDED WARRANTY SYSTEM USING IOT

<sup>1</sup>TAOFIK TOLA AJAGBE, <sup>2</sup>ESTHER F FOMSI LAGOS STATE UNIVERSITY, NIGERIA <u>fiktola@gmail.com</u>

#### ABSTRACT

This paper presents a case study of warranty service management within a manufacturing company, which provides predictions and systematic distribution during a specific timeframe. With the sale of a product, the manufacturer is legally obligated to provide warranty services to the customer. While reducing costs is important, the overall strategy within the company must focus on purchasing durable and reliable products, offering adequate after-sales services. This paper explores key aspects of evaluating costs to make informed decisions, ensuring the company achieves its objectives. Additionally, it emphasizes the role of technical staff in providing support and warranty services. The study shows how analyzing past performance can help predict and manage future costs more accurately during the warranty service lifecycle. The proposed system is based on typical models in public services, such as fleets of customized vehicles, where the total warranty cost is known from the start of the project.

Keywords: IoT, Home Appliance Automation, Warranty Management, Arduino UNO, After-Sales Service.

## IC19-098: DESIGN AND IMPLEMENTATION OF OPTIMIZED AREA AND PDP MULTIPLIER FOR HIGH-SPEED DIGITAL CIRCUIT APPLICATIONS

#### <sup>1</sup>M KATHIRVELU, <sup>2</sup>P SANDHYA RANI, <sup>3</sup>I VAMSI KRISHNA, <sup>4</sup>K BHARATH DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING GMR INSTITUTE OF TECHNOLOGY, INDIA

## ABSTRACT

Low-power, high-speed multipliers are essential for applications involving high-speed switching, such as Digital Signal Processing (DSP), microprocessors, and filters. Various multiplier architectures have been explored by researchers to address this need. In traditional 8-bit array multipliers, partial products are generated using AND gates and added sequentially through full adders and half adders. However, this approach introduces delays due to the dependency on previous computations of partial sums. In the proposed architecture, partial products are added in parallel to minimize delay, leading to faster output generation. Additionally, power dissipation in the full adder is reduced by using CMOS technology. The designed 8-bit multiplier was implemented and simulated using Cadence Virtuoso with 90nm technology, and its performance, including power consumption, speed, and area, was thoroughly analyzed.

Keywords: Full Adder, Half Adder, Multiplier, Power Dissipation, CMOS Technology.

International Conference on Veracity Research in Scientific Computation and Engineering Trends (ICVRSCET-2019)

#### IC19-066: INTELLIGENT SYSTEM FOR DETECTING FUEL FRAUD AND IDENTIFYING NEARBY FUEL STATIONS

<sup>1</sup>K SRAVANI, <sup>2</sup>M RAMA LAKSHMI, <sup>3</sup>M JACINTH, <sup>4</sup>P SUBBA RAMI REDDY, <sup>5</sup>R N V SAI KUMAR DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING GMR INSTITUTE OF TECHNOLOGY, INDIA <u>mkathirvelu77@gmail.com</u>

#### ABSTRACT

Fuel fraud in the filling process has become a significant concern, with petrol stations manipulating pumps to display an incorrect amount of fuel, leading to customer exploitation. To address this issue, the proposed system uses a flow rate sensor to accurately measure the fuel being dispensed and displays the actual amount on an LCD screen. The system also sends the measured data via GSM technology to a registered mobile number, creating a verifiable record. This helps transportation network owners track the fuel usage of vehicles operated by paid drivers. Additionally, if the fuel level drops below a certain threshold, an LED light will turn on until the tank is refilled. The system also utilizes GPS to show the distance to nearby petrol stations, which is displayed on the LCD.

Keywords: Fuel Fraud Detection, Flow Sensor, GPS, Fuel Level Monitoring, GSM Technology.

International Conference on Veracity Research in Scientific Computation and Engineering Trends (ICVRSCET-2019)

#### IC19-113: ENHANCEMENT OF ANTIPODAL VIVALDI ANTENNA PERFORMANCE FOR WIRELESS APPLICATIONS

<sup>1</sup>NAVIN DUWADI NEPAL OPEN UNIVERSITY, NEPAL <u>76251002@nou.edu.np</u>

#### ABSTRACT

This paper explores the miniaturization of the antipodal Vivaldi antenna by incorporating triangular slots. A standard antipodal Vivaldi antenna is initially designed using an FR4 epoxy substrate with a dielectric constant of 4.4 and a thickness of 1.6mm. Triangular and circular slots are then added to the upper layer to reduce the antenna size while improving performance in terms of return loss, gain, and bandwidth. The antenna operates within a frequency range of 3GHz to 25GHz. The triangular slot significantly contributes to the size reduction, and the circular slot at the exponential part of the antenna minimizes mutual coupling between different slots. The antenna is designed using a microstrip feedline technique, and the simulation results are obtained using HFSS 13.0. The performance of the simulated and manufactured antennas is compared in terms of return loss and gain.

Keywords: Antipodal Vivaldi Antenna, Miniaturization, Triangular Slot, Microstrip Feedline, HFSS Simulation.

International Conference on Veracity Research in Scientific Computation and Engineering Trends (ICVRSCET-2019)

## IC19-121: SMART HEALTH INSURANCE PREDICTION: UTILIZING XGBOOST FOR RISK AND PREMIUM OPTIMIZATION

<sup>1</sup>BHAVYA KADIYALA UTHSC, MEMPHIS, TN, USA <u>kadiyalabhavyams@gmail.com</u>

## ABSTRACT

The growing complexity of health insurance claim prediction requires sophisticated techniques for precise eligibility determination. The aim of this research is to create a strong, automated model for predicting health insurance eligibility through machine learning. The issue is the inefficiency of conventional methods in identifying intricate relationships in high-dimensional data, resulting in incorrect predictions. This study presents a framework that incorporates Principal Component Analysis (PCA) for dimensionality reduction and XGBoost for classification, run on cloud-based infrastructure (AWS S3) for scalability. The model performs with 85% accuracy, with high precision (0.80) and recall (0.75). The results illustrate the model's potential to make real-time eligibility predictions, providing a scalable solution to insurers and the groundwork for further refinement using more features and methods.

Keywords: Health insurance, XGBoost, Principal Component Analysis (PCA), AWS C3, Cloud integration.

Mar. 28

International Conference on Veracity Research in Scientific Computation and Engineering Trends (ICVRSCET-2019)

## IC19-052: LINING OF INDUSTRIAL CHIMNEY WITH THERMAL RESISTANCE GLASS BLOCK

<sup>1</sup>MUHAMMAD MUJAHID, <sup>2</sup>ELEGBELEYE FEMI ABIODUN WALTER SISULU UNIVERSITY, SOUTH AFRICA <u>felegbeleye@wsu.ac.za</u>

## ABSTRACT

Thermal resistance glass blocks, composed primarily of silica and boric trioxide, are used as lining materials to protect industrial chimneys from thermal heat exposure up to 300°C. These blocks enhance the lifespan of the flue cane by providing effective protection. The outer concrete shell of the flue cane is shielded using bitumen paints, further reinforcing its durability. The porous nature of the glass blocks prevents liquid penetration while collecting dust emitted from the flue cane into the atmosphere. Additionally, the blocks aid in the desulphurization process by absorbing sulphur content from the gas. This lining method efficiently collects up to 30% of the dust, contributing to improved air quality and longer operational life for industrial chimneys.

Keywords: Industrial Chimney, Thermal Resistance Block, Lining Work, Thermal Stress, Desulphurization.

International Conference on Veracity Research in Scientific Computation and Engineering Trends (ICVRSCET-2019)

## IC19-162: REVAMPING METHODS FOR STEEL SLAG DISPOSAL IN CONSTRUCTION

<sup>1</sup>D BALAMURUGAN, <sup>2</sup>Y DEVANRAJ, <sup>3</sup>S ARULKUMARAN DEPARTMENT OF CIVIL ENGINEERING IFET COLLEGE OF ENGINEERING, INDIA <u>drbala96@gmail.com</u>

#### ABSTRACT

The steel manufacturing industry generates a significant amount of solid waste, with steel slag being one of the byproducts. Steel slag is produced during the process of refining metals and creating alloys, and millions of tons of it are generated globally each year. Concrete, being the largest construction material produced, relies heavily on aggregates, which play a crucial role in providing structure, reducing shrinkage, and enhancing economic efficiency. This paper explores the potential of utilizing steel slag as a substitute for fine aggregates in traditional concrete mixtures and evaluates its feasibility in the production of paver blocks. Further research is necessary to fully understand the viability of using steel slag in construction applications.

Keywords: Steel slag, fine aggregate replacement, concrete, paver blocks, construction materials.

> International Conference on Veracity Research in Scientific Computation and Engineering Trends (ICVRSCET-2019)

## IC19-079: BEWELL MOBILE APPLICATION FOR INTER-LINKING HOSPITALS

#### <sup>1</sup>AKANKSHA MEHNDIRATTA, <sup>2</sup>PRADNYA KULKARNI JAYPEE INSTITUTE OF INFORMATION TECHNOLOGY, INDIA mehndiratta.akanksha@gmail.com

#### ABSTRACT

The main objective of this application is to help users locate the nearest hospitals and compare the facilities based on the medical specialists available. By utilizing the built-in Global Positioning System (GPS) feature in smartphones, the app calculates the proximity of hospitals and guides users to the selected hospital using Google Map APIs. This application also allows users to view updated lists of free surgeries and available treatments, including general and specialized medical care. It provides information about available tablets for treatment and blood availability. An informative survey of various hospitals is used to provide accurate details about doctors and specialists in each facility, helping patients find the nearest hospital with the required medical expertise.

Keywords: Medicine availability, Blood availability, GPS, Specialist, Free surgery.



#### IC19-110: FRAMEWORK FOR EXPERT NOVEL ENGRAVING USING MASTERPRINT

#### <sup>1</sup>YASSINE HABCHI NAAMA CENTRE UNIVERSITY, ALGERIA <u>habchi@cuniv-naama.dz</u>

#### ABSTRACT

In the field of government and forensic science, the demand for effective authentication methods for electronic devices or personal gadgets of criminals and victims has significantly increased in recent years, with biometrics playing a vital role in verification. Many consumer electronics, such as smartphones, now include fingerprint sensors for user authentication. The MasterPrint technique is a method that generates either a synthetic or genuine partial fingerprint, which matches one or more stored templates, making it useful in both government and forensic sectors for bypassing device authentication and accessing critical stored data. This approach is more efficient for launching indirect attacks against fingerprint-based verification systems. The algorithm utilized results in a higher success rate for generating MasterPrints, offering improved matching compared to existing methods.

Keywords: Fingerprint, MasterPrint, Authentication, Forensic, Biometrics.

#### IC19-040: SIGNCRYPTION AND PROXY RE-ENCRYPTION FOR SECURE DATA SHARING USING BBS ALGORITHM

<sup>1</sup>R SURESH, <sup>2</sup>P LAKSHMIPRIYA DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING IFET COLLEGE OF ENGINEERING, INDIA

#### ABSTRACT

Information is crucial in the Internet of Things (IoT) environment. A significant portion of current IoT systems relies on centralized cloud-based data-sharing frameworks, which are difficult to scale to meet the demands of future IoT applications. The involvement of third-party service providers requires additional trust between the sensor owner and the data user, along with payment for their services. To address scalability and trust issues while automating payments, this paper presents a proxy re-encryption scheme. The system stores IoT data in a distributed cloud after encryption. To share the collected data, the system establishes runtime dynamic smart contracts between the sensor and the data user without requiring a trusted third party. Additionally, it employs an efficient proxy re-encryption scheme that ensures data is visible only to the owner and individuals involved in the smart contract. This innovative combination of smart contracts with proxy re-encryption provides a fast, efficient, and secure platform for storing, exchanging, and managing sensor data. The proposed system is implemented on an Ethereum-based platform to analyze its performance and security properties.

Keywords: IoT, Proxy Re-Encryption, Smart Contracts, BBS Algorithm, Secure Data Sharing.

## IC19-159: SURVEY ON MACHINE LEARNING ALGORITHMS IN BREAST CANCER DIAGNOSIS AND DEVELOPMENT OF A HYBRID APPROACH BASED ON FEATURE SELECTION

#### <sup>1</sup>KOWSHIK B, <sup>2</sup>SAVITHA V, <sup>3</sup>KARTHIKRAJ H, <sup>4</sup>PRIYA DHARSHINI G DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING SNS COLLEGE OF TECHNOLOGY, INDIA

#### ABSTRACT

Breast cancer is one of the leading causes of death among women, yet it is highly treatable if detected early. Various machine learning algorithms are used for breast cancer diagnosis, including Support Vector Machine (SVM), K-means, neural network-based classifiers, and decision trees. This paper aims to compare these algorithms to determine which provides the highest accuracy. The Support Vector Machine algorithm is known for its pattern recognition and regression capabilities based on statistical learning theories, with five features selected for prediction, offering high accuracy in breast cancer diagnosis. Decision tree algorithms like ID3, C5, and CART classify breast cancer by splitting data into different levels of nodes, although they generally produce lower accuracy compared to SVM. While the K-means algorithm is not ideal for classification, it excels at discovering hidden patterns in data. This paper proposes a hybrid approach combining these algorithms to enhance the accuracy of breast cancer diagnosis predictions.

Keywords: Breast cancer diagnosis, Machine learning algorithms, SVM, Decision tree, Hybrid approach.

International Conference on Veracity Research in Scientific Computation and Engineering Trends (ICVRSCET-2019)

#### IC19-175: UTILIZATION OF BAGASSE ASH AS A BRICK MATERIAL FOR SUSTAINABLE CONSTRUCTION

<sup>1</sup>OSCAR FAMOUS DARTEH ACCRA TECHNICAL UNIVERSITY, CHINA <u>dartfamous@gmail.com</u>

#### ABSTRACT

Industries generate large amounts of waste products, and this issue has become more significant in recent years. Among these, the sugarcane industry produces a substantial quantity of waste. One such waste, known as bagasse, is the fibrous byproduct from sugarcane processing. When bagasse is burned, it produces bagasse ash, which contains varying amounts of silica (SiO2) and alumina, depending on the incineration conditions. This study explores the use of bagasse ash, combined with lime and steel slag in different proportions, for brick manufacturing. The primary goal is to reduce the cost of bricks while maintaining their strength. Bricks are molded to a size of 225×95×75 mm, and compressive strength tests are conducted after 14 days of curing. The findings suggest that incorporating these materials can contribute to both costeffective and sustainable brick production.

Keywords: Bagasse ash, Steel slag, Lime, Compressive strength, Sustainable construction.

#### IC19-087: COMPARISON OF STRUCTURAL DESIGN RESULTS BETWEEN E- TABS AND SAP2000 SOFTWARE

#### <sup>1</sup>ANDY SURYOWINOTO, <sup>2</sup>SITI ZALEHA HARUN DEPARTMENT OF ELECTRICAL ENGINEERING INSTITUT TEKNOLOGI ADHI TAMA SURABAYA, INDONESIA <u>andysuryo@itats.ac.id</u>

#### ABSTRACT

Structural analysis is crucial for determining the behavior of buildings, bridges, and trusses under typical loading conditions during their service life. In this study, we perform a comparative analysis of two popular software programs: ETABS and SAP2000, for the design and analysis of a 20-story residential building. The analysis includes evaluations of bending moment, shear force, base shear, and axial force for various sections of the structure. The goal is to determine which software provides the most economical and safe design, based on their ease of use and accuracy. ETABS (Extended 3D Analysis of Building Systems) is a program designed for analyzing and designing multi-story buildings, while SAP2000 (Structural Analysis Program) is a versatile general-purpose finite element program for static and dynamic analysis. This research compares the results of both software programs under different seismic zones and soil conditions, considering factors like displacement, story shear, moment, base moment, and base shear. The comparison is made using tables and graphs to determine the most optimized design. The study also includes a static wind analysis with earthquake load combinations for both software programs.

Keywords: ETABS, SAP2000, Structural analysis, Seismic zones, Multi-story structure.

Mar. 28

International Conference on Veracity Research in Scientific Computation and Engineering Trends (ICVRSCET-2019)

#### IC19-022: BEHAVIORAL ANALYSIS OF HIGH VOLUME FLY ASH CONCRETE BEAM

<sup>1</sup>EDWIN A, <sup>2</sup>ANAND V, <sup>3</sup>KOTTEESWARAN S, <sup>4</sup>V SHEELA KARUNYA INSTITUTE OF TECHNOLOGY AND SCIENCES, INDIA <u>edwinraj91@gmail.com</u>

#### ABSTRACT

The construction industry plays a significant role in boosting the economy, with concrete accounting for 60-70% of the total project cost. In India, the annual consumption of concrete is approximately ten million tons. At the same time, a large quantity of fly ash, a byproduct from power plants, is discarded as waste. This study investigates the use of fly ash as an eco-friendly substitute for cement in concrete. The concrete grade used in this experimental study is M30, with 53-grade OPC, where 50% and 55% of cement are replaced by fly ash. A superplasticizer, Conplast SP 430, was added at dosages of 0.5%, 1%, and 1.5% for casting high volume fly ash (HVFA) concrete. The mix design, based on the IS method (1:1.02:2.57), was used to achieve the required strength. Concrete cubes, cylinders, and prisms were cast and tested for compressive strength, split tensile strength, and flexural strength at different curing periods. The maximum strength was obtained at the 50% fly ash replacement level with 1.5% superplasticizer. The results showed that HVFA concrete offers a cost-effective alternative to conventional concrete, with comparable strength and reduced material usage, making it suitable for large-scale construction projects.

Keywords: Fly ash, HVFA concrete, Superplasticizer, Compressive strength, Flexural strength.

## IC19-105: VOICE INTERROGATION AND POWER EFFICIENCY WITH SMART SENSE ALGORITHM FOR AI CONTROLLED SMART BIKE USING IOT

#### <sup>1</sup>N ABIRAM, <sup>2</sup>S PRAKASH GKM COLLEGE OF ENGINEERING AND TECHNOLOGY, INDIA <u>abiram2704@hotmail.com</u>

#### ABSTRACT

This project aims to develop an artificial intelligence-based system integrated into bikes, converting conventional electric bikes into smart AI-powered vehicles with voice interrogation and an integrated navigation system. The system utilizes IoT support to ensure bike and rider safety and security. In 2017, road traffic accidents resulted in 1.25 million deaths and over 50 million injuries worldwide. Studies have shown that 87% of crashes are caused by driver negligence. Despite traffic authorities enforcing helmet-wearing and prohibiting riding under the influence, these rules are often violated. Additionally, many bikes suffer from inadequate navigation systems, lack real-time traffic calculations, and have poor fuel efficiency, with some battery-operated bikes offering only an 80 km range per full charge. To address these issues, this project proposes an AI system that enables voice interaction with the bike, verifies the rider's driving license, incorporates advanced navigation, checks helmet usage, and ensures the rider is sober. Powered by SENSE technology, this system supports IoT, over-the-air updates, and AI capabilities.

Keywords: Voice interrogation, Smart bike, AI navigation, Fuel efficiency, Intruder detection.

## IC19-047: MODELING, ANALYSIS AND DESIGN OF TRADITIONAL MASONRY UNITS REINFORCED WITH NATURAL FIBERS FOR WALLS

#### <sup>1</sup>R RAVI, <sup>2</sup>SAARANYA KUMAR D, <sup>3</sup>PRUDHVI KRISHNA V, <sup>4</sup>SAI NITHIN REDDY DEPARTMENT OF CIVIL ENGINEERING SRM INSTITUTE OF SCIENCE AND TECHNOLOGY, INDIA

## ABSTRACT

Straw, an agricultural by-product from cereal plants like barley, oats, rice, rye, and wheat, constitutes about half of the crop yield. Chrysopogon zizanioides, commonly known as vetiver, is a perennial grass native to India, and its fibers are frequently used in lime to prevent cracking from plastic and drying shrinkage. These fibers also help reduce concrete permeability and mitigate water bleeding. Certain fiber types enhance impact, abrasion, and shatter resistance in lime. Lime, which has been utilized in construction for centuries, has gained renewed importance in conservation architecture. Lime mortars harden through carbonation, a process explored in this study. The use of natural fibers as reinforcing materials has increased significantly since 1995. This project examines the behavior of straw and vetiver fibers as reinforcements in walls. Key properties such as modulus of elasticity, Poisson's ratio, Young's modulus, water content, and dry density were measured by casting walls with lime and natural fibers such as straw (1%) and vetiver (0.45%). The compressive strength of these reinforced walls was also analyzed.

Keywords: Natural fibers, Lime, Fiber reinforcement, Vetiver, Compressive strength.



#### IC19-155: STUDY ON DUCTILITY BEHAVIOR OF ENERGY EFFICIENT WALLS

#### <sup>1</sup>UPPALAPATI SUDHEER KUMAR SARDAR VALLABHBHAI NATIONAL INSTITUTE OF TECHNOLOGY, INDIA <u>ds22el004@eed.svnit.ac.in</u>

#### ABSTRACT

Mud has been used in construction for centuries, with structures still standing that were built using mud mortar. It offers several advantages in construction, including being environmentally friendly. The mortar from existing structures has been analyzed to identify various admixtures used, which can be modified for better performance. The focus of this study is to evaluate the mechanical properties of modified mortar and its suitability for brick masonry. Mud mortar is commonly used with stone and brick masonry in modern construction. The study involves examining mechanical properties, organic analysis, and physical properties, with the help of analytical techniques such as XRD, SEM, and FTIR. The results demonstrate positive improvements in the fresh state, mechanical properties, and durability when compared to reference mortar.

Keywords: Mud mortar, Brick masonry, Mechanical properties, XRD, SEM.

## IC19-069: PORTABLE CHARGER FOR HANDHELD DEVICES USING RADIO FREQUENCY ENERGY HARVESTING

#### <sup>1</sup>AARTHI M, <sup>2</sup>M DINESHKUMAR, <sup>3</sup>G LAKSHITHA, <sup>4</sup>R LOGESWARAN M KUMARASAMY COLLEGE OF ENGINEERING, INDIA

## ABSTRACT

When a smartphone's battery depletes and there is no electrical outlet in sight, mobile and wearable devices can utilize RF Energy Harvesting as a solution. This innovation enables people to easily recharge their mobile or wearable gadgets, especially during emergencies. Despite the widespread availability of mobile and wearable devices, their battery life often lasts less than a day. While power packs, hand generators, and solar cells provide additional power, an innovative solution using RF waves allows devices to recharge. In the absence of traditional power sources, RF energy, which is ubiquitous, offers an unlimited energy source. The increasing global demand for electrical energy, primarily derived from fossil fuels, highlights the need for sustainable alternatives. This project aims to address the energy crisis by enhancing the efficiency of RF energy harvesting systems for handheld devices.

Keywords: RF Energy Harvesting, Portable Charger, Wearable Devices, Sustainable Energy, Mobile Recharge.

## IC19-024: EXTENDED SLIDING MODE CONTROL SCHEME WITH TORQUE RIPPLE REDUCTION FOR PERMANENT MAGNET SYNCHRONOUS MOTOR

<sup>1</sup>PROSPER HOEYI CENTRAL UNIVERSITY OF TECHNOLOGY, SOUTH AFRICA <u>phoeyi@cut.ac.za</u>

#### ABSTRACT

This project introduces an advanced extended sliding mode control for permanent magnet synchronous motors, addressing various uncertainties. The proposed extended sliding mode control effectively adapts to changes in the controlled system, maintaining high tracking performance. The sliding mode control is designed to compensate for significant disturbances and ensure high precision in servo operations. This approach targets the rotor speed and stator resistance estimation, assuming that only stator currents and voltages are available for measurement. Simulation results validate the effectiveness of the proposed method in mitigating torque ripple.

**Keywords:** Torque Ripple, Disturbance Observer, Permanent Magnet Synchronous Motor, Sliding Mode Control, Servo Performance.

> International Conference on Veracity Research in Scientific Computation and Engineering Trends (ICVRSCET-2019)

#### IC19-131: ON-DUTY FORM MANAGEMENT SYSTEM FOR EDUCATIONAL INSTITUTIONS

<sup>1</sup>A AMIRTHAVARSHINI, <sup>2</sup>V S BHARATHI, <sup>3</sup>P JENCY GNANASUNDARI, <sup>4</sup>K MAHESWARI DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING SNS COLLEGE OF TECHNOLOGY, INDIA amirthaarjunan007@gmail.com

#### ABSTRACT

The On-Duty Management System is designed to automate and streamline the process of managing on-duty forms within educational institutions. This online system simplifies the workflow, enabling staff and students to apply for on-duty leave, track approvals, and view records without the need for manual documentation or signatures. Key features include on-duty approval, cancellation, and report generation. Users, including students, staff, and HODs, can access the system remotely to apply for leave, view past on-duty records, and submit requests to higher officials. This system helps overcome the difficulties of manual record-keeping, offering ease of use and time efficiency.

Keywords: On-duty management, Educational institutions, Workflow automation, Leave application, Report generation.

## IC19-058: ANALYSIS OF WEAR PROPERTIES OF METAL MATRIX COMPOSITE FOR AIRCRAFT WING

<sup>1</sup>DR K CHANDRASEKARAN, <sup>2</sup>R RAMANATHAN, <sup>3</sup>D SILAMBARASAN, <sup>4</sup>R SIVA, <sup>5</sup>K SIVABHARATHI DEPARTMENT OF MECHANICAL ENGINEERING M.A.M. SCHOOL OF ENGINEERING, INDIA <u>silambusgm57@gmail.com</u>

#### ABSTRACT

The study investigates the wear properties of LM24/Silicate/Fly ash hybrid composite, which was prepared by incorporating 4 wt. % fly ash particles with varying amounts of silicate (8, 16, 24 wt. %) using the vortex method. Tribological properties were assessed under various loading conditions (15, 45, 60 N) and sliding velocities (0.75, 1.5, 3 m/sec) using a pin-on-disc apparatus. Additionally, mechanical properties such as hardness and tensile strength were evaluated. The incorporation of silicate and fly ash materials into the aluminium alloy matrix showed improved wear resistance and enhanced mechanical properties. The study also applied optimization techniques, using Taguchi L9 orthogonal array, to analyze the tribological and machining parameters affecting wear rate and surface quality. The significance of various parameters was determined using ANOVA.

Keywords: Metal matrix composite, LM24 alloy, Tribological properties, Wear resistance, Taguchi method.